

# Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

OCTOBER 30, 1944



*New Fairchild Military Cargo Plane: First flight picture of Fairchild's C-82 Packet, powered by two Pratt & Whitney 18 cylinder R-2800-22 engines with a takeoff horsepower of 2,100 each. The plane has a range in excess of 3,500 miles and is in the 50,000 pound class.*

## **Delegates Arriving in Chicago for World Air Parley**

Representatives of over 50 countries to meet in effort to work out pattern for cooperation in development of international air transportation...Page 7

## **Criticize Route Data Sharply in North Atlantic Hearing**

Statistical studies assailed as based on steamship experience and declared not applicable to air transport; expect arguments to end this week....Page 40

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CAB vice-chairman forecasts wide gains in international as well as domestic travel as result of greatly expanded needs for service.....Page 9

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Marked improvements in quality and performance and sharp reductions in price expected as result of textiles and methods developed.....Page 21

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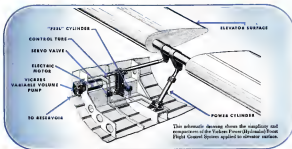
Methods of cutting down time losses in landing operations and use of gliders in reaching communities now lacking communication discussed...Page 44



## MARTIN MARS

Has

### VICKERS POWER (Hydraulic) BOOST FLIGHT CONTROL



In a paper he presented before the National Automatic Meeting of the S.A.E., E. G. Riley, Project Engineer of the Glenn L. Martin Co., summarized the essential characteristics of a power boost control system as: "(1) proportional feel, (2) feedback and free control stability, (3) immediate and smooth response even after long idle periods, (4) manual stand-by, (5) instantaneous control by pilot in case of failure, (6) operate satisfactorily under temperature from minus 65° F to plus 150° F,

(7) be capable of being operated by automatic pilot, (8) easily serviced by inexperienced personnel, (9) be relatively trouble-free and have a minimum of adjustment."

In his summary, Mr. Riley made the following statements: "It can be concluded, therefore, that the Vickers power boost control unit is capable of satisfactorily fulfilling all the requirements set forth." This Vickers equipment is now standard on the Mars airplane.

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## THE AVIATION NEWS

# Washington Observer

**CHICAGO CONFERENCE**—The high significance of the International Aviation Conference opening in Chicago this week has been overlooked by some elements of the aviation industry. Actually, the conference is part of the post-conferences which will follow. The Chicago meetings are to aviation what Dumbarton Oaks was to the world security phase of post-war international planning and what Bretton Woods was to a start on international financial planning. High officials in Washington attach great importance to the sessions and the results will have far-reaching effect on the aviation industry generally.

**LITTLE PUBLICIZED**—There have been expressions of surprise in some official circles over lack of publicity given to the Chicago conference in the daily press in view of its significance. It is not overlooked, of course, that the election campaign, spectacular action in the Pacific and moves in Europe naturally overshadow the meeting. At the same time, what is said and done at Chicago probably will have permanent effect on our post-war life in the view of informed persons in the Capital.

**AIRLINE ADVERTISING**—The two-month controversy between Office of Defense Transportation and the airlines over airline advertising has been referred to L. Welch Pogue, chairman of CAB. DOT Director Johnson commented in passing the matter on to Pogue that apparently his objections to airline advertising encouraged rather than deterred travel, were not understood at the Air Transport Association. Next step apparently is up to the CAB.

**FOREIGN SURPLUS DISPOSAL**—Foreign Economic Administration is hurriedly building up an organization to dispose of surplus materials abroad. Chief obstacle facing the agency is said to be the absence of a central inventory and the probability that not until the war is over is it likely to have one. Airfields, hangars and even aircraft will be among items FEA will handle.

**AIRCRAFT WAR PRODUCTION COUNCIL**—The threatened demise of the National Aircraft War Production Council has been postponed, many members believing it would be a serious mistake to close the office, despite the fact that aircraft production is well in hand and continues to meet demands of the armed services. The next output for October is expected

to equal and perhaps beat the September production of 7,528 airplanes.

**CIVIL PILOT TRAINING**—Definite planning for resumption of civil pilot training under CAA is now under way. Resumption of CPTP is viewed as an essential step for development of a large private owner field and a program is now being outlined with estimates of costs. The newly created Aviation Training Service of CAA will include the CPTP in its scope.



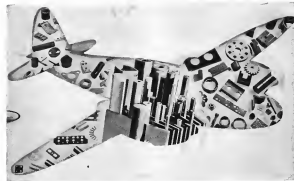
B-29's top-rear three-20 turret.

**ARNOLD REPORT ON THE WAY**—AAF public relations and intelligence officers have been alerted on General Arnold's annual report to the Secretary of War which is being awaited by the industry since last year the report was loaded with new material which has not been disclosed by the Air Forces and consequently was on industry's restricted list. There is some speculation that electrical and radio controlled devices long on the secret list may be discussed and clarified.

**RAILROAD'S STRATEGY**—Any open campaign by the railroads to get into air transportation is still considered unlikely to observers on Capitol Hill where the impression is being given by rail interests that they want only the

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**Aviation News**  
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October 30, 1944

## Delegates Arriving in Chicago For World Air Parley This Week

Representatives of over 50 countries to meet in effort to work out pattern for cooperation in development of international air transportation.

Delegates of more than 50 countries are assembling in Chicago this week to see whether they can devise a mutually acceptable program to make international air transport a force for extensive rapid development of trade among nations and preservation of peace.

American Secretary of State Adolf A. Berle, Jr., chairman of the American delegation and keynote conference chairman, will deliver a welcoming address at a plenary meeting Wednesday afternoon at the Stevens Hotel, site of the conference sessions. Thursday, Berle again will address the delegates, and presumably will be elected permanent chairman. He is expected in both speeches to emphasize the need for earliest recognition and recognition of international air transport, with maximum restrictions.

**Vital to World Air Trade.**—This conference constitutes the first session of the peace settlement. The future of world trade in the air may well be at stake. The issue is: Shall the skies be open to commercial aircraft in general flight on an equitable basis for airlines of all interested countries or shall portions thereof be closed to some airlines through the machinations of any nations which might seek special privilege?

After several days of preliminaries in which the various delegates supposedly will have opportunity to air their views in general sessions, the conference will break down into committees to consider the comprehensive agenda offered by the State Department.

**Some Sessions Open to Press.**—The Department has promised the public full information on the proceedings, with as many sessions as possible open to the press. Before it is finished, the conference will have to reconcile the con-

flicting views of delegates of virtually all the air-minded nations.

The United States proposes a multilateral granting of commercial landing rights on a non-discriminatory basis. It opposes any type of international air authority except a technical one with powers to recommend appropriate measures to participating governments.

**British Program.**—The United Kingdom favors a rigid control over air transport to be exercised by an international body which would have power to certificate airlines and them where they might fly, how often, and what portion of total traffic they might carry.

New Zealand and Australia propose that the conference agree to international ownership and operation of global airlines and trunk routes. Delegation Chairman Daniel G. Sullivan of the War Cabinet reiterated in Washington last week that both New Zealand and Aus-

tralia had not receded from this position taken at Canberra many months ago, but he acknowledged there is opposition to the proposal and expressed confidence the conference ultimately would reach compromise solutions insuring availability of international air services to all people.

Canada has offered a draft agreement with variations on the U. K., New Zealand and Australian themes.

**China and Russia.**—China and Russia are expected to side with the United States on the question of international control. U. S. officials hope also that they will have the support of Latin American countries.

Egypt, along with Iceland which will be represented by Minister Thor Thors, will be observed closely at the conference, because of the great importance of both countries in future American air ambitions.

**Argentinian Not Represented.**—On the other hand, Argentina, which does not figure importantly in global air patterns, will not be represented because the Farrell government is not recognized by the United States. Britain, which likewise withholds recognition, was reported anxious to have Argentina represented.

It was pointed out here that Britain is beginning a drive for post-war trade in Latin America.



**READY-TO-FLY P-38 GOES ASHORE AT OUTLYING BASE.**—Two "ducks" lashed together to form a catamaran, transport a P-38 fighter plane from ship to shore. This method of unloading enables it possible to ship fully assembled planes for delivery to airports ready to fly.

which probably would begin with Argentina, Paraguay and Uruguay. His reason, in the end, was that Latin American contingents will be observed closely to see to what extent the probability of post-war trade returning is its greater ties with Europe will affect decisions on international air policy.

The business of the conference, according to the American plan, will be divided into four parts: "Provisional" world air routes, technical controls, international aeromedical body and formation of an interim council to continue the unfinished work of the conference. The conference is expected to last at least three weeks.

**New Air Convention**—One of the main tasks will be the opening of work on a new International Air Convention to replace those of Paris (1919) and Havana (1928). It is generally agreed that these two conventions are so ambiguous as their meanings that they have impeded the advancement of air transport.

**Japan and Germany**—Moreover, political considerations prevented the opening of many air routes in the past. China kept out all airlines for a long time out of fear of Japanese incursions. The United States gave Australia the same treatment for the same reason. Thus, the air powers have decided to keep Japan and Germany on the ground and hope to thereby avert a large part political barriers to opening of air routes.

## New Hellicon Action

Discourse was made by Germany last week that its new Hellicon fighter, the PAF-3, a faster, improved Hellicon is in action in both the European and Pacific theaters. Details are still restricted, but the

plane has an improved engine cowling and a mirror-smooth finish which gives it greater speed than its predecessor. The new model has an outstanding combat record.

## Joint Port Service Plan Takes Shape

Corporation owned by airlines to assume some of various operations at airports, under program proposed.

Formation of a corporation jointly owned by all the airlines to provide facilities and service at airports has passed the dramatic stage, with definite proposals put forth to solve the terminal situation existing at some terminals.

The suggested corporation, Airlines Service Corp., would take over some of the existing joint operations and at the start would restrict its activities to an area bounded by Chicago, Boston, Richmond and St. Louis. If the experiment were successful, the corporation would extend its scope, or other regional corporations would be set up.

**Joint Equal Awards of Stock**—Participating airlines would hold equal amounts of stock. Stockholders would elect the board of directors which, although small in number, is contemplated to include representatives of large and small domestic lines, and international operators. Top executive would be a general manager with headquarters in a centrally-located city, perhaps Cleveland or Pittsburgh for the Northeastern region proposed as the testing ground.

The corporation would operate at an airport under contract with the airlines using that field. Representatives of those lines would form a committee to consult with and advise the corporation's local manager, but it is believed the local manager would have independent authority.

**Duplicate Services**—The corporation's broad purpose would be to eliminate, as far as possible, such situations as now exist at Washington, where service and ramp service are provided by two unrelated bodies and tickets are sold at two offices not responsible to airlines, at New York where there is duplication of manage-

ment of these facilities, at Chicago where United Air Lines handles the air mail field post office, RCA air conditioning service and other services are jointly owned.

Some of the facilities and services which could be made available as outlined by the Airlines Service Corp. are: air mail field post office; airport air express office; inter-airline communication; public address systems and information office; airplane service pits, ticket office; telephone; ground transportation; baggage handling; cargo loading and unloading; ramp service.

**Contracts**—In some cases, the corporation would enter into a contract by an airline to perform one of the services. For instance, the small post office at Chicago could continue under the management of United, but the airline could be responsible for the conduct of the office to the service corporation. Another latitude contemplated would be that all airlines at a particular field would contract with the corporation for facilities. Ramp operations, for example, could be carried on with its own equipment by the airline having the greatest frequency of airport use. The corporation would be the field utilizing the corporation's equipment.

The service corporation would own necessary equipment and charge the operating airlines for depreciation and other direct expenses. Funds necessary for purchasing equipment would be borrowed from airlines served, with repayment being made by volume of service performed. The corporation likely would be a non-profit body, may balance from concessions probably being distributed among stockholders.

Among the first terminals to be given consideration, should the plan be adopted, is Washington, with Lufthansa Field perhaps second on the list.

## Navy Order to Ryan

Ryan Aeronautical Co. announced last week possession of orders exceeding \$100,000 for a "fast and improved" Navy fighter, the Navy's first authorization of a company manufacturing, indicating technical importance of the airplane.

While details of the Ryan plane have not been made public, it is prohibited by security restrictions, its value to the fleet air arm was described as a "stay on the job" message to Ryan workers from Rear Admiral DeWitt Hanson.

# WPB Reconversion Machinery Ready to Start Work on V-E Day

Reorganized board prepared to launch program as soon as Allied military forces have eliminated Germany from war.

Planning for reconversion has come to a dead standstill in Washington. All has been done that can be done pending military developments.

In general, the machinery for reconversion is not in place, having been theoretically completed with the creation of the Office of Demobilization and Reconversion. The reorganization by Chairman J. A. Krug of the top layer of War Production Board authority is now finished, and WPB is ready to launch its V-E Day reconversion plan as soon as Germany is withdrawn from the war.

Since next week V-E Day—the war in Europe ends this fall or during the early winter, reconversion will start immediately. The plans for V-E Day which have been drawn up and are being worked out by the War Production Board are now in the White House. President Roosevelt signed it reluctantly, remarking that it did not go far enough. Regardless of whether the new Congress is Republican or Democratic, the controversial subject is likely to be brought up again, chiefly for amendments to its "human demobilization" provisions.

Meanwhile, considerable alarm is arising in WPB over the steady parade moving out of the agency. What a few months ago amounted to a trickle of resignations has now grown into a flood, and top officials are worried. Work before last there were 100 quits. By last week it had jumped to 260. The problem of how to handle WPB employees has quickly worked its way up to Chairman Krug who is now trying to devise some means of keeping his staff intact.

**Full Staff Needed**—Chief reason for Krug's alarm over the soaring quit rate is the fact that, when Germany folds, WPB will need to be fully staffed in order to carry out the V-E Day reconversion plan. The WPB chairman is realistic enough to recognize the fact that if workers are quitting now, it will be infinitely more difficult to recruit new ones after an armistice with Germany has been signed.

Another reason why WPB is extremely anxious to keep its employees is that several new divisions will be established, such as the proposed Aircraft Division, and these will have to be staffed by new Construction Bureau, likewise, will find need for additional work-

ers as its operations expand with removal of controls.

Between now and V-E Day, WPB will promote its "repet authorization" plan for resumption of civilian production but very little concrete goods is expected in return to the market as a result of these operations. Too many manufacturers cannot qualify, especially the larger ones, and all of them realize that it is strictly a temporary and substitute reconversion plan which will be issued under overnight or Germany's defeat.

**Measures May Be Reopened**—When the reconversion convenes in January, there is considerable likelihood that the Demobilization and Reconversion Act of 1944 will be reopened. Few reconversion planners were satisfied with the measure, and when it came before the White House, President Roosevelt signed it reluctantly, remarking that it did not go far enough. Regardless of whether the new Congress is Republican or Democratic, the controversial subject is likely to be brought up again, chiefly for amendments to its "human demobilization" provisions.

Current reconversion status can

be summarized as follows: If Germany collapses soon, war contracts will be cut back drastically, restrictive orders will be removed in wholesale quantities, CRRP will be abandoned, and in general, industry will get a green light. If Germany holds out through the winter, there will be little change in the situation that exists today.

## Milo Burcham Killed

One of aviation's best known test pilots, Milo Burcham, Lockheed chief of flight, was killed recently in the crash of a fighter in a test flight at Burbank, Calif.

Burcham is credited with developing and personally applying many flight test procedures which have materially advanced prototype and production flight testing, and had an important part in early work cooperating with the Mayo Clinic in accumulating data on the effects of high altitudes on pilots.

**Stunt Pilot**—After a short pilot career in which he gained wide fame for his up-side-down flights, Burcham joined Lockheed in 1937 as a ferry pilot, soon was promoted to chief of pilots testing the Lockheed XP-38. More recently he directed flight tests on the four-engine Constellation, and rode with the late Eddie Allen on the initial test flight of the transport plane. Prior to his appointment as chief of flight, early this year, he had held the post of chief engineering test pilot.



FOXHOLES BRACE TRAINERS AGAINST STORM.

Dixing "foxholes" to bury the wheels of 120 Bunting Kaydet training planes, and placing 2nd graders on the wings to break the airframe, prevented all but minor damage to the planes at Lockheed School of Aeronautics, Lakeland, Fla., during the recent hurricane which scuttled about 300 mph. News reported in the school. The school's 2000 AAF 2nd graders, commanded by Col. C. E. Phiberty.



## C-W Displays Mock-up of CW-20E, Commercial Version of *Commando*

Craft, put in operation by Army before experimental work was completed, is said to embody experience and thorough "shakedown test" of AT5 and NATS airlines.

By WILLIAM G. KEY

Commercial version of the Curtiss *Commando*, first in a series in Curtiss-Wright's bid for the post-war transport and cargo market, was shown to the press at mock-up form at the St. Louis, Mo., plant last week.

Originally engineered as a commercial airliner, the *Commando* was ordered in contract quantities by the Army before the experimental model was completed and was flying the ocean non-stop before even the manufacturer knew what the plane could do. Since that time, it has been produced in thousands.

**CW-20E**—The commercial version—the CW-20E—is the end result of the experience with the C-48 (Army 20C) during the three years of the war, the commercial engineering done when the original model was designed, and the maintenance experience of the airlines during the war projected into post-war needs.

Among the changes from the original model are a re-designed ceiling now providing greater visibility and improved de-icing for bad weather operation, more powerful engines and improved flight control.

**New Nose**—The new nose of the *Commando* gives the pilot greater range of vision, with double-pane, "birdproof" safety glass and de-

fogging mounts incorporated to insure clear vision. The hinged nose section gives maintenance crews access to the back of the instrument panel. The socket arrangement gives all controls forward of the pilots in units for ease of operation. Illumination in the cockpit is provided by a combination of incandescent light and "black light" for celestial intensity.

Control is improved through substitution of aerodynamic ballast and spring tabs on ailerons, rudder and elevator for hydraulic boost power. All control surfaces are of metal construction in contrast to the usual fabric-covered units. Airline pilots who have handled the ship with the improved controls term the plane remarkably easy to handle in the air. The wingspan of the commercial version is 106 feet, over-all length 76.21 feet and height 21.7 feet, identical with the military model.

**Power Plant**—The CW-20E will be powered with two Wright Cyclone 38-cylinder (C31-B2) engines with Curtiss electric three-speed propellers. Equipped with the Wright Cyclones, the CW-20E will have a normal takeoff gross weight of 48,000 pounds, a design maximum load of 18,990 pounds and a maximum cruising speed of 243 mph at 10,000 feet.

The *Commando* is engineered primarily for medium range commercial operation, although it has a maximum range of 1,520 miles.

In the mock-up version, provision is made for 36 passengers in twin reclining seats on both sides of the center aisle. Overhead racks are provided for small luggage, while space is provided on a small ledge at the bottom of the window frames for small personal articles such as handbags. The galley is built in forward of the passenger compartment, with entry through a Dutch door that doubles as a serving passageway. Included are the usual throat seats, a Dutch oven, grill hot plate, toaster, mixer and baby bottle warmer. A separate

counter is built in for a snack bar. A men's room and a ladies' powder room are built aft.

**Left-Type Door**—Entry is through a lift-type door at the usual position, with a partition shutting off draft from the passenger compartment. Opposite the entry is a business station with seat, control panel for opening cabin lights, hot water heater and the ventilating system, a telephone for communication with the galley and pilots' compartment, and a desk for making out flight reports, etc.

Lighting is furnished by a single indirect fluorescent lighting fixture running the length of the ceiling panel and by individual reading lights. The ceiling panel also houses the air-exhaust section of the ventilating system, which completely changes the cabin air once each minute.

**Cargo Compartments**—Two large cargo compartments are built into the lower section of the plane, providing 520 cubic feet of space for luggage, mail, express and other shipments. Both are easily accessible for loading from the ground.

As many as 42 passengers can be accommodated by altering interior arrangements.

The manufacturer's weight empty is 22,180 pounds, the maximum gross loading weight 48,480 pounds and maximum payload 12,430 pounds. Wing area is 1,540 square feet.

**Aided Media Defense**—Design of the original plane was George A. Page, Jr., now director of engineering for the Airplane Division of Curtiss-Wright. The prototype was submitted to the British Air Ministry and is still in use. It has one of the war's most remarkable records, being credited with saving Malta in one of the crucial hours of that beleaguered site.

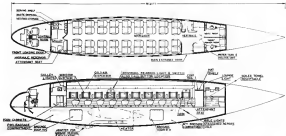
Thirty of the ships were down non-stop across the 500 miles when the transport of Barma made it necessary to improvise an aerial Burma Road. They went over even before the plane had been thoroughly tested on this side of the ocean, arriving in Barma and over the Hump into China under conditions never before encountered in regular flying operations.

Curtiss-Wright engineers are credited with devising means of debasting fuel system vapor locks crossing hump with all types of planes in that operation. Additional *Commandos* were sent to that theater and are credited with ferrying 75 percent of the vital material down into China.



Ringed nose cone on Curtiss CW-20E gives quick access to back of instrument panel.

Curtiss model shows interior arrangement, with galley forward, passenger compartment, entry location.



Sectional drawings show floor plan, cross-sections of fuselage.



Retouched photo shows how *Commando* will look in post-war passenger service.



'CHUTE PACKING TABLE':

Five separate parachute packing table opens from a compact size to a 50-foot long working surface. It was constructed from steel tubes from a wrecked glider by a North Av Percor mobile unit.

## Air Standards Group To Leave for Britain

Technicians seek to effect unification of aircraft parts precision and materials.

A group of technicians representing aircraft manufacturers in the United States will leave shortly for Great Britain on a mission of more than ordinary significance to the industry.

Primary objective is to bring about uniformity of standards for the American and British aircraft industries through a study of British industrial aircraft standard parts, practices and materials.

Members of the mission are considered an international standards program such as the one projected will effect substantial savings to the manufacturing industries and aircraft operators of both nations. It is expected that in addition to the economies effected through standardization, cooperation between the two countries will expedite conversion to civilian production and facilitate post-war international airline operations.

The group, representing the National Aircraft Standards Committee and the Society of Automotive Engineers, is returning a visit made to the United States by a British technical mission in May, last year. The mission has been organized and will be conducted under the direction of Flight Lt. D. G. Moffitt, R.A.F., of the British Air Commission.

He expressed the belief that the mission can achieve substantial



### AMERICAN TECHNICAL MISSION TO BRITAIN:

A group of technicians representing the National Aircraft Standards Committee and the Society of Automotive Engineers is shown leaving British Air Commission headquarters in Washington after completing arrangements for a series of conferences ahead with British aircraft technicians. Left to right: Eugene W. Norris, Aeronautical Chamber of Commerce; Eric Dudley, Curran-Wright; Airplane Division; Thomas P. Moore, Ryan Aeronautical; James D. Redding, Society of Automotive Engineers; Gustav Corvelli, Wright Aeronautical; Flight Lt. Douglas Moffitt, R.A.F., British Air Commission; and L. D. Bonham, Lockheed Aircraft Corp.

progress toward a goal of uniformity in international industrial aircraft standards which, it obtained, would be a significant development in aircraft manufacturing and of vital importance to aviation generally.

**Study British Plans.**—The United States mission will study the British standards program at first hand and seek a thorough understanding of their standards and applications. Since all members have an intimate knowledge of United States standards, they will be able to make on-the-ground comparisons toward a common goal. Once

achieved, this will enable the ministries of the two nations to harmonize their respective standards and practices more closely, and to achieve uniformity wherever possible.

The mission will spend from four to five weeks in Great Britain as guests of the British Ministry of Aircraft Production, and the Society of British Aircraft Constructors, opposite number of the Aeronautical Chamber of Commerce of America. They will spend several days each at typical important aircraft centers and maintenance bases reviewing specifications and standards affecting production, operating and maintenance.

The United States mission includes T. P. Rears, chairman of the international standards project of the National Aircraft Standards Committee, and standards engineer of the Ryan Aeronautical Co.; Eric Dudley, assistant to the director of engineering, Curran-Wright Corp., Airplane Division; Eugene W. Norris, director of technical services, Aeronautical Chamber of Commerce; J. D. Redding, treasurer, aeronautical department, Society of Automotive Engineers; L. D. Bonham, materials and processes department manager, Lockheed Aircraft Corp.; and Gustav Corvelli, windscreens engineer, Wright Aeronautical Corp. Lieut. Col. G. R. Gallardo, AAF, will represent the working committee of the Army-Airly Aeronautical Board, as an observer.

## U. S. May Lift Ban On Coast Flying

Restrictions on civilian aviation in area expected to be removed by Jan. 1 as result of San Francisco conference.

Removal of military restrictions on West Coast civilian flying by Jan. 1 may result from the recent conference of military and civil aviation representatives at San Francisco.

By mid-December, action may be taken by the Western Defense Command, headquarters San Francisco, to remove the restricted zone to a third coast, the zone was done recently on the East Coast, to modify regulations for the entire zone, or to combine both restriction ending methods.

Gen. Charles H. Bonesteel, commanding general, Western Defense Command, believes that by mid-December existing military conditions will have altered to a point where severe controls on private flying will not be necessary.

**Understanding Believed Reached.**—While no formal declaration of policy was issued from General Bonesteel, it may be assumed that understanding favorable to civilian flyers was reached at the recent meeting between the general, CAA regional managers R. A. Hook, Jessie Munson and Paul Merriam, and Capt. and Mrs. Charles Harcourt, Jr., secretary of the interdepartmental traffic control board, Washington.

West Coast CAA managers presented numerous appeals and demands for removal of military grounds from private plane owners, schools and charter companies for restoration of coastal flying privileges for innocent and non-scheduled flights. Bonesteel left the matter to "Haggar" and Hook reported the case of the private flyer had won "a decidedly favorable reaction."

**No Conflict With Military Flying.**—"We assured General Bonesteel that CAA will be able to control civilian flying adequately, to such an extent there will be no conflict with military operations," Hook said.

As of today, private flying is permitted only for "war essential" purposes, within the Western Defense Zone extending from Mexico to Canada, and extending 100 miles from the coast in California. Flights are permitted only from point to point between Army-designated airports, and civilian aircraft outside are permitted to come into the

zone only for repairs at overhaul shops within the zone, when they cannot conveniently obtain these outside. Current regulations represent a relaxation from an absolute ban on private flying within the zone which was effective until recently.—S. B.

## Revamp CAA To Meet Post-War Expansion

Reorganization of Civil Aeronautics Administration functions looking toward expansion of its activities. After the war, due to the impetus given aviation by the war and its inevitable increase in the post-war period, has been announced by Administrator T. F. Wright.

Functions are regrouped under three heads: Executive, Operations and Development. A new division of Foreign Operations, as forecast in Aviation News, Oct. 28, will be headed by a representative of the agency administrator, now with the title of assistant administrator. The division, which comes under the Development grouping, is set up to anticipate steps in which CAA will be required because of expansion of air services abroad, requests from foreign governments for technical advice and assistance, and preparations for conferences and consultation with foreign nations relating to worldwide civil aviation, in which the United States will participate.

**Training Service.**—Educational component is combined in the newly created Aviation Training Service, with Bruce Utsumi as director. This includes civil pilot training, manpower training, air cadet training, training of foreign pilots, and training research. A third development division is Airports Service under the present director, C. H. Donaldson. Deputy Administrator Charles Stanton will direct the operations services including federal airways, safety regulations, the standardization center at Houston, Texas, Washington National Airport, and a regional coordinator who will perform liaison between the CAA in Washington and the nine regional offices.

### RAS TO HEAR Wright

T. F. Wright, Civil Aeronautics Administrator, has accepted an invitation to give the third annual Wilbur Wright Lecture before the Royal Aeronautical Society of Great Britain in London next May on a subject of his own choosing.

## Wright Field Tests Replica of Robot

ATSC construct "buzz bomb" after study of plane which fell in England.

A replica of the German V-1 robot bomb, built up by the Air Technical Service Command at Wright Field, after study of parts from bombs which fell in England, has been tested in this country in a project to develop adequate defenses against it.

Command officials said they had no interest in repeating the weapon. Of reference was because the interest was in accurate destruction of military objectives rather than random destruction.

**27 Feet Long.**—The robot measured about 27 feet in length and all was built on 17-foot wheels. It includes a screw-driven fuselage, over which is mounted a tube containing the impulse jet engine, which uses gasoline. A series of rectangular vanes in the combustion chamber exert force against the air mass behind the tube through an opening, and drive the bomb forward. A "pilot" in the front of the tube opens to admit air, and closes before each explosion to prevent loss of power. In operation the engine sounds like a giant outboard motor. Fuel-air mixture is the war head of explosive, and the robot is a self-contained unit operated by compressed air.

Parts for the replica were machined in Wright Field engineering shops, after metals were analyzed for dimensions. Jack and Heinz company is credited with reconstruction of the directional controls, which include a pre-set compass and a gyro-control automatic pilot. The robot is subject to drift in crosswinds.

**Parts Reproduced.**—Component parts are now being produced by several manufacturers to \$49,000 ATSC with a quantity of robot for actual launching test. Ford motor company is building the engine; Republic Aviation Corp. the fuselage and assemblies; Jack and Heinz, the control equipment and compressed air boiler; and Monsanto Chemical Corp., the capillary rockets which launch the bombs.

Testing trials will be carried out at five times, once daily, and many of the robots will be fired with warheads, while special electrical equipment designed by ATSC electrical radio laboratory will "track" bombs from launching to landing.



### GLIDER CARRIES TANK:

A light tank is shown being loaded into a British Hamilcar glider, designed as a tank-carrier for airborne troops. The glider also can carry troops, guns and assault craft and vehicles of all kinds.

# New Controllable Pitch Propeller For Lightplanes in Production

75 hp-98-pound unit, manufactured by Diamond Tool Co., expected to be available for personal aircraft as soon as output can be stepped up to exceed military needs.

By BLAINE STUBBLEFIELD

Diamond Tool Co. is in production on Annesley controllable pitch lightplane propellers. New and additional machinery is being moved into the plant now and output will be stepped up to quota level immediately.

Outstanding achievement claimed by the company is the Annesley design is simplicity and low weight—about 10 pounds complete, approximately the same weight as that of a comparable fixed-pitch propeller. The manufacturer expects, when maximum production is achieved, to establish a price of approximately \$1.25 to \$1.50 per horsepower for civilian propeller.

**◆ Collins Orders**—G. Annesley, owner and manager of Diamond, told AVIATION NEWS in an interview

at his plant, 304 West 54th Street, New York, that he may be able to exceed his military production schedule and, if so, he can fill civilian orders very soon—in any case not much later than victory day in Europe.

The Annesley propeller is controllable, in two positions at present, by means of a push-pull cable from the cockpit. The change is made in flight, and it can be made under full thrust, but operators are advised to reduce their throttles a bit before making the shift.

The blade angles are changed by the movement of the pitch control rods which engage with pivot pins on the bottom of the blade ferrules. Longitudinal movement of these rods, and consequent change in low pitch of the propeller blades, is

affected by the movement in a forward direction of the thrust plate of the actuator. The actuator in turn is moved forward by pulling one of three actuator pins in three helical slots. This causes a forward helical movement of the thrust ring, forcing the thrust plate. A simple push-pull cable effects this movement.

**◆ Counterweights Used**—Movement of the blades back to high pitch, and their retention there, is effected by two counterweights, one on each blade ferrule. The counterweights are of such weight and radius that they exert a positive force in the direction of high pitch. They cancel out the centrifugal twisting moment which tends to turn the blades to low pitch position. Due to the action of the counterweights there are no heavy stresses in the propeller and only a relatively light pressure is required to effect the pitch change.

It will be observed that there are no moving hub parts in motion when the propeller is in high pitch. But the hub is designed and fabricated for any required duration of operation in low pitch, as in protracted climbing or carrying excessive load.

**◆ Other Projects**—In addition to the production design, called Model 75, Diamond has a 150-hp model in production; also several other projects in development. One is a simple hydraulic controllable hub, for diesel engines (Model 75 can be used only on engines having taper or spline shaft). A variation on the hydraulic hub is a constant speed unit, which can be priced between \$1 and \$2.50 per horsepower. Both of the hubs are set with aircraft manufacturers on test runs, and both feature simplicity and low weight.

Diamond Tool Co., which has been producing aviation and other metal products for many years, owns outright its New York plant. The entire plant is being toolled and fitted for propeller production, and some office facilities are being added and renovated. After the war, Mr. Annesley plans to construct a new plant, with an airport, in the region of New York, retaining the present one for other than propeller work.

**◆ Forecasts**—Mr. Annesley believes lightweight, efficient, low-cost controllable hubs will be wanted on nearly all personal lightplanes in the early post-war period. He figures that about 6,000 lightplane wooden propellers are being produced each month now and that normally about four propellers are



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After the war, Collins will again speculate in the development and production of advanced types of communication equipment for commercial aviation.

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\*The Collins Autotune is a repositioning mechanism which quickly shifts all transmitter or receiver channels simultaneously and with extreme precision to any one of a number of predetermined frequencies. U. S. Patents issued and pending.



The Annesley Controllable Pitch Propeller: Upper left, installed on plane; upper center, blade assembly; upper right, hub and actuator; lower, the Model 75 mounted

produced for each airplane, an agency and replacement. The present facilities, when tooling is completed for the war order, will produce about 50 Model 75's per day. In Mr. Kennedy's opinion, present impetus being given to light-plane variable pitch propellers by Army and Navy air forces will make this source of efficiency available to non-scheduled flying years ahead of the time it might otherwise have been expected.

Commenting further on the characteristics of Anzley's biplane, Mr. Kennedy said maximum low and high speeds will be set by a simple adjustment. The normal setting is 16 deg. in, high, and 11 deg. in, low. The model No. 75 engine is measured 34 inches from center of the crankshaft.

All blades are wood at present, but the hub is easily convertible to metal blades.

## New Johnson Rocket Ready for Production

Craft prepared for "full delivery" to be offered with 185 hp. or 140 hp. engines optional.

Engines of 185 or 140 hp. will be optional with the new single-engine Johnson Rocket, to be built at Fort Worth, Texas, by Johnson Aircraft, Inc., the exclusive distributor, Rocket Aircraft Sales Co., of Lubbock, Texas, reports First plane, a demonstrator, will use 185 hp. engine, and is expected to be flying soon.

Distributor claims materials now are available for production of limited number of single and two-engine models for "full delivery." The two-place single-engine Model 140, expected to make top speed of 115 mph, while top speed of Model 185 is not quoted. Two-engine model with 200 hp. Continental or Lycoming, is expected to make top speed of 215 mph, carry six. Estimated prices are, \$4,500 for Model 140, \$5,000 apiece for the bigger engine, and \$12,000 for the two-engine model.

**Variable Landing Gear**—Equipment includes hydraulic retractable tricycle gear, Koppers automatic controllable pitch propeller, flap, night flying instruments, two-way radio, landing light, etc. Design is reported as similar to original Rocket prototype with 125 hp. engine reported first flown Nov. 23, 1943, now having logged 300 hours test flight, except prototype had conventional landing gear.



Newest sketch of R. S. Johnson's single-engine Rocket: One of two basic designs he plans for personal and business use. Model shows will have either 145 hp. or 140 hp. engine, he reports. First plane being built as demonstrator will have 185 hp. Johnson's plant is at Ft. Worth, while J. D. Thomas, president of Rocket Aircraft Sales Co., Lubbock, Texas, has exclusive distributor rights for USA.

Designer R. S. Johnson, was successfully associated with Alexander Aircraft Corp., Colorado Springs, Calver Aircraft, Bennett Aircraft, and Globe Aircraft Corp., before forming his own company in 1942. Structural features of plane include welded steel tubing fuselage faced with molded plywood structure covered with doped fabric, and all-wood, monocoque, spruce and plywood wings, with molded plywood stressed skin, covered with doped fabric.

## BRIEFING

For Private Flyers and Non-Scheduled Aviation.

By ALEXANDER MESURELY

**Canadian Plane**—A five-place twin-engine postwar plane is being headed for production by a Canadian manufacturer. It is larger than the four-place type which most American manufacturers think eventually will be the best selling personal plane. It might have men for pickup or mail delivery.

**High School Solution**—Telefoning results of E-6 escape flight featured for 11, high school students at Park Airport, East St. Louis, W. I. Thompson, manager, reports six boys were ready for sale after three hours, these girls were ready after 4½ hours, although minimum CAA requirement for E-6 escape solo is five hours' flight training. Possible further reduction of minimum requirement may be forthcoming as result of these and similar calculations.

**NASA Thinking**—"It is certainly high time," says the National Aviation Trades Association Dispatch, "that a separate and distinct aviation committee be formed in both

House and Congress and that the non-scheduled part of the aviation industry make its wants and problems understood by Congress." The newsletter chastises the Bi-State Civil Aviation report, which makes it clear, NATA says, that the flying public and non-scheduled aviation has no place in Congress' thinking other than to be economically regulated and kept from interfering with the scheduled part of the industry.

**More Complicated**—Cones now Dr. Stegenga, University of Illinois physiology professor, with the opinion that civilian pilots should be required to study aviation medicine, know the limitations of the human body in its ability to withstand strains resulting from acclimatization, atmospheric pressures and centrifugal forces. At a time when most aviation people are agreed that existing regulations are already far too complicated and are passing for their simplification, the professor's suggestion is uttered. It would be an excellent idea, from the individual's standpoint if he knew something about these things, but as far as making it part of any consequence requirement, hasn't the poor private flyer enough to worry about?

**Reset Landing Strips**—Aircraft Owners and Pilots' Association is working with the American Hotel Association to select resort hotels throughout the country whose landing strips for accommodation of visiting flyers may be installed. A list of over 300 such proposed landing areas sites already has been forwarded to CAA and CAB for survey leading to post-war development. AOPA points out that the more inaccessible the resort by other means of travel the more advantageous the landing strip installation would be.



## F.O.B. Air Terminal

The quibbling "F.O.B." on price tags because a fraction bit of American industry has been nation with distribution of strikes output. Today, as an international market for war needs looms ahead, "F.O.B." no longer means delivery to a freight station or pier, but to the airport as well. Smart civilian drivers will not only design and package their products for air shipment, but quote "F.O.B. Air Terminal." The establishment of an airport-airport rate, with allowances for pickup and delivery, would enable large volume shippers to enter a world which shipping

and a service to their customers.

Another instance, of portable service to the operator, comes from the weight and fuel economy of Wright Cyclones. On a long required transport, the heavy weight safety provided a half ton load—half economy on a southern flight—costs another half ton. And Cyclone operation over millions of miles has demonstrated distinctly lower maintenance costs.

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## Cheaper, Lighter, Tailored Chutes Seen for Post-War Private Flyer

Marked improvements in quality and performance and sharp reductions in price expected as result of synthetic textiles and preservation methods developed.

By ALEXANDER M. SURELY

A parachute for the private flyer—what will be its requirements?

In the opinion of some government research experts, the parachute manufacturers now or soon will have available the materials and know-how to produce chutes far superior to those now in use and at much lower cost for the private flyer.

Present-day chutes differ only in minor details from those used 20 years ago. Although most American military chutes are now made of nylon, which does not disintegrate with age as does the silk formerly used, the same expensive and man-hour-consuming method of replacing chutes periodically is still required by AAF and by CAA.

Synthetic Textiles — Men who have studied new synthetic textiles which are mildew-proof and not

affected by moisture say these could be used in building canopies and shrouds that would remain in good condition in the pack without resorting to repacking. Among such materials are mentioned Trevon and Vitexon.

Considerable advance has been made recently in moisture-proof sealing of packages against mildew and similar damage. It is believed that even silk or rayon could be used for parachute canopies and could be packed indefinitely without repacking, if the pack was moisture-proofed.

Webbing Substitutes — Cotton webbing now used for parachute harness is 1 1/4 inch wide and 3/8 inch thick. This could be replaced by nylon webbing of the same strength 1 inch wide and 1/8 inch thick with considerable reduction

in the bulkiness of the chute pack. The cumbersome seat pack type parachute is overdue for retirement, to be replaced by a comfortable vest or jacket with a back-pack in which the chute is spooled out to form a thin cushion over the wearer's back instead of a thick bundle at his posterior.

Today's parachutes are designed for hundreds of jumps. Yet no pilot, except possibly a test pilot or a military flyer, ever expects to use his parachute. It is considered entirely practical to design a parachute which the company could absolutely guarantee for five jumps, at a considerably lower price, thereby bringing it within the reach of the average private flyer. Present-day chute costs run about \$350 for a 20-foot chute. It is believed that a chute entirely safe for five jumps, using lighter webbing and materials, could be sold with a good profit margin for \$100. Moreover the cost of having a chute repacked periodically by a licensed parachute rigger becomes a major item. The cost would be entirely eliminated if the chute was moisture-proof or packed in a moisture-proof pack, where it could remain indefinitely.

Stability Improved — Improvement of parachute stability offers another opportunity for parachute design ingenuity. The hole or vent at the top of the canopy was an attempt to improve stability, but much remains to be done. Varying porosity of cloth in the canopy may be the best answer.

The more porous the cloth, the more stable the chute, but also the more rapid its descent. The successful design must permit the chute to descend slowly enough for safety, at the same time utilizing more porous cloth where practicable.

One inventor recently patented a canopy made of cloth more porous at the skirts or edges than at the center. Another method of altering a similar result would be to sew an extra thickness of cloth into the center section. Both of these methods eliminate the center vent, but proponents say the results attained are decidedly superior to the vent method.

Another attempt to improve stability utilized cloth made or wings attached inside the canopy which were expected to dampen the oscillations of the chute. Tests were not reported as having been successful.

Future private flyer parachute requirements, as listed by the research experts, are:



#### HELICOPTER FISHING TRIP:

Shosley Hiller, 19-year-old inventor of the first successful counter-rotating helicopter, has prepared the drawing suggesting a use for his helicopter by the post-war sportsman. Equipped with floats, the machine of the future rests on the water, enabling the fishermen to cast his line from its swivelable upper door. When he has caught his limit, he can ascend vertically and fly home. The helicopter, when put into mass production by Henry Kaiser on the West Coast, may be an important contender in the personal aircraft market. It is one of the most promising rotary-winged developments.

time-proof pack is needed to eliminate repacking.

► Bulkiness of harness and pack must be reduced.

► Stiffly must be improved, probably by varying porosity.

► Cost should be reduced from \$950 to \$100.

► Parachute should be built for five-jump guarantee, rather than for hundreds of jumps.

Although such radical departures in parachute design would require a testing program to establish the safety of the new designs to the satisfaction of government agencies, in light of wartime research, some experts in Washington laboratories are convinced that these improvements are inevitable.

Assuming that comfortable low-cost chutes are developed, it is probable that the majority of private plane owners would keep them in their planes just as the motor boat owner keeps a few life preservers handy. Statistics are not available as to the percentage of private flyers owning and carrying parachutes in their planes before the war but in a safe assumption that it was a very small fraction of the total.

## Glider Conversion Data Issued by CAB

Board lists general requirements for adoption of trainers constructed basically from lightplane design.

Civil Aeronautics Administration has issued new technical information on conversion of training gliders constructed basically from lightplane design.

General requirements listed by CAB are: complete power plant unit, including firewall, fuel system, instruments and landing gear structure and shock absorbing unit; spars, which are on all the wings, and the spines controls must be removed and the wing opening covered over with fabric in areas on the Aeromac (TG-8) and Taylorcraft (TG-8) will have to be reduced when converted to an airplane, or additional light tests conducted for approval.

► **Aeromac**—All major structural component parts can be used on the Aeromac O-33B (type certificate 115) with the following exceptions: fuselage structure forward of bulkhead No. 1; bulkheads 1U-1L and 1U-3L and side and top rails between bulkhead 1U-1L and 2U-2L, in; landing gear, stabilizer,



**KEY MEN AT GEORGIA AVIATION CLINIC:**

Leaders in three important aviation groups are shown above as they discuss plans problems in interstate at Georgia Aviation Clinic at Macon. Left to right: J. Wendell Coombs, president, Aeronautical Training Society; Lowell Swenson, manager, National Aeronautics Association; and John Wilson, manager, National Airplane Trade Association.

and wing spollers. Bishman of USCA was used on the TG-8 instead of the O-33B type.

The O-33B, incidentally, is similar to the L-3H and L-3C Army versions now being sold in surplus. Both are approved only with a Continental engine. CAA says, however, that Franklin or Lycoming engines can be installed and approved "subject, possibly, to a small amount of additional testing." The Aeromac V series (type certificate 728) aircraft are similar to the O-33B, and CAA says "it appears that the G-3 (TG-5) gliders may be converted into V series airplanes also. However, there are several major structural differences."

► **Piper**—In the case of the Piper, all major structural component parts of the TG-8 glider can be used on the Piper J3 series (Army LA) aircraft with these exceptions: structure forward of the front landing gear fitting, landing gear and wing spollers. CAA notes that the recently far considerable change in the forward landing structure makes this glider less readily convertible than Aeromac or Taylorcraft gliders. The company recommends use of the gliders only for spare.

Taylorcraft major structural component parts can be used on the Taylorcraft D series (Army LA) with exception of the structure for-

ward of the firewall, landing gear, vertical tail and wing spollers.

So far only Piper TG-8, Laitair-Kaufman TG-4A and Swenson TG-4A gliders have been offered for bids, although Taylorcraft and Aeromac models are expected to be offered almost immediately. There are no ceilings on these training gliders.

## Stress Small Ports

Need for development of many small airfields in Missouri was urged by speakers at the Missouri Small Airport Planning Conference at Columbia, Mo., last week. Approximately 140 persons from various communities, representing chambers of commerce and aviation interests, heard John Wilson, National Airplane Trade Association executive director, and Eugene V. Fryhoff, aviation division, Missouri State Department of Resources and Development, principal speakers.

Wilson called for modest beginnings, using small level fields for private plane landings and take-offs, and growing crops on part of the land as an additional revenue. It was pointed out the State now has fewer than 30 airports, and needs many more. Fryhoff said main need was for small airport type fields and not huge, expensive airports.

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## Canadian Air Clubs Bare Post-War Plans

Several seek new fields as part of expansive programs.

Plans for post-war civilian operations by Canadian flying clubs, principal civilian flying organizations in the Dominion, are being reported by individual clubs, although no integrated program is as yet reported from the Canadian Flying Clubs Association, Ottawa.

The clubs originally were estab-

lished in 1917 to provide a nucleus of pilots and mechanics in the event of national emergency. Many of the club members joined the Royal Canadian Air Force, in the early stages of the war, and flying clubs were used for elementary training by RCAP, until later an RCAP training program took over this work.

Programs—Reports from individual clubs show:

• Kingston, Ontario, Club has been granted permission by the Department of Transport to receive or buy 30 de Havilland Moths, and will be allowed use of Collins Bay airport, since the former municipal airport has been used for wartime housing.

• Toronto Flying Club is looking for a new field near Midland, Ontario, having sold most of its assets.

• Hamilton Flying Club also is looking for a new field, may share a nearby RCAP field with the municipality after the war.

## Turner Discontinues Detroit-Memphis Line

After 43 days of experimental flying, Roscoe Turner Aeronautical Corp., at Indianapolis has discontinued its daily charter service between Detroit and Memphis, having earned enough passengers during the operation to pay approximately half the costs.

Valuable Data—Col. Roscoe Turner reports the service provided "much valuable information" on operating costs, type of equipment to be used, and size of cities to be included. The service was operated without advertising a schedule, except by direct mail notices to war planes indicating when the service was available. It was discontinued after E. Welch Pogue, CAB chairman, notified Turner the daily service might be interpreted to be a scheduled airline service.

Equipment used on the flight consisted of Stinson Reliance, with Turner's personal plane, a Waco, used as an extra plane when needed. One flight was operated each day, each day, with no set schedule, with intermediate stops at Toledo, Ohio, Ft. Wayne, Anderson, Indianapolis, Terre Haute and Evansville, Ind., Peabody, Ky., Martin, and Jackson, Tenn.

## Seattle Air Parks

Initial plans for early postwar construction of at least three airfields within the Seattle, Wash., city limits for private planes were discussed at a recent meeting in Seattle, Wash., of flying enthusiasts and the Aviation Committee of the Seattle Chamber of Commerce. The Chamber's committee is working with Gov. Arthur H. Langlie's State Aviation Committee in a program for establishment of a statewide network of small airports or strips.

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## COMMENTARY

### Land-Based Air Power on Leyte Will Pave Way for New Goal

Island will have to be built up as strong air base for long range fighters and bombers as prelude to moving up to Luzon.

Fortunately for our side the Japanese military leaders slowly, ever since our slow and painful capture of Oms and Borne in New Guinea in January, 1943, our land-air team under Generals MacArthur and Kurney, and sea-air team under Admiral Nimitz, Halsey, Spruance, Mitscher, and Gernhardt Hale and Twining, have repeatedly by-passed the most obvious goal and, tackled one at least a couple of jumps ahead, sometimes more.

Overlooking Ley by means of paratroops and airborne engineers, they seized that strong point as a matter of days. Fighting heavily at Wewak by airpower, they gained it by and also the strong base at Atupe in a long forward pass to Hollandia. More recently, when all signs pointed to bombardment of Halmahera, they seized Morotai with hardly a struggle.

**Island-hopping Pays Off**—Likewise in the South and Central Pacific. Guadalcanal to Munda, to Vella Lavella, to Bougainville, to the Green Islands, skipping many

obvious and important enemy bases, and cutting off Rabaul from the east, and all points south Kwajalein and Eniwetok in the Marshalls, cutting off much-needed Milla, Jalut, etc., the Marines instead of Truk, the Palau instead of Yap, and so the pattern in sea. And now Leyte instead of Mindanao. Next jump is somebody's guess, but it will hardly be seen.

Leyte will have to be built up as a powerful air base for long range fighters, medium and heavy bombers, advance striking units of the Fifth Air Force, home again at last. (The Fifth was organized in the Philippines in the Far East Air Force just three years ago, Oct. 25, 1941). After its losses of the early months of the war in the Philippines, Java, Australia and 20 months in New Guinea, elements of it are again in the Philippines, part of the recently named and immensely more powerful Far Eastern Air Force, commanded by Lt. Gen. General Kurney. Digging in at Leyte will take several weeks, but strong air power on the island will pay rich dividends.



ALLIED PLANES STRIPPED BY NAZIS!

Spitfires and a Republic P-47 Thunderbolt, partly stripped, are seen in this bombed hangar near Paris, where the Germans kept downed Allied planes to salvage parts for their own aircraft.

Confusing Jap Supply Line—Moving up to Luzon with its rich prize of Manila, front axial, air and military base in the Far East, is a logical objective. Luzon is a key to the Japanese Empire as presently constituted, guarding the sea lanes to the Netherlands East Indies, Malay States, French Indochina, Thailand and Burma. So also is heavily fortified, though at the moment somewhat isolated. Formosa—if anything more so than Luzon, with its close relation to the home islands, China coast and dominating spot in the South China Sea. Whether we take Luzon or Formosa (or both), the month of Japan's ability to obtain vital supplies from her rapidly dwindled but undisciplined Indian conquests are numbered. Here is a key to the Jap strategy in China. Cutting China in two and pushing General Chiang Kai-shek's highly disrupting air power back into the Szechuan and Sichuan provinces is a two-pronged and worthwhile objective. However, it may be that both are inadequate to these frantic desires set only to close the gap in the Peking-Canton north-south railway, but to connect up a through rail line to Singapore from Hongkong through Kweichow, Kwantung, Hainan, Saigon, Bangkok, Penang, and Kuala Lumpur. This would provide a means of securing at least somewhat required supplies and of evacuating large numbers of troops now cut off by sea, stationed on the Celebes, Borneo, Java, Sumatra and the Malay States.

**Oil for Japan's Flares**—Roughly 70 per cent of Japan's oil production comes from Borneo, Java and Sumatra, with a still higher percentage of aviation gasoline and fuel oil. Important points are the large oil refinery at Balikpapan, near the oil fields of Sangai-Batang, and the oilfield at Tarakan, all in eastern Borneo. Largest oil refinery in the whole Jap empire is at Palembang, Sumatra. Java has a large oil refinery at Tjempoe.

There are highly important industrial works, including ordnance, shipbuilding and aircraft assembly at the flourishing centers of Batavia, Bandung, Soerabaya, Madoen and Probolinggo. More than three-fourths of Japan's nickel supply comes from Ponnias and Melih in the Celebes. Strangling the Japanese military machine of cutting off such an artery of vital supplies and seized goods is an air objective with high priority, and will prove to be one of the main results of MacArthur's return to the Philippines.

—NAVIGATOR

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- Piston Pins
- Crankshaft Check Pins
- Machined Magnesium Pins
- Cylinder Head Down Pins
- Machined and Ground Pins

#### PARTS FOR PROPELLER ASSEMBLY

- Machined Magnesium Pins
- Piston Rings

#### EQUIPMENT FOR MAINTENANCE OF AIRCRAFT

- Pin for Oxygen Compressor
- Piston Rings for Oxygen Compressor
- Pin for Oxygen Compressor
- Pin for Air Compressor
- Pin for Air Compressor
- Piston Rings for Air Compressor

#### LUBRICATING OIL PARTS

- Machined Aluminum Pins
- Piston Rings
- Machined and Ground Pins

## PRECISION WORKERS IN IRON, STEEL, ALUMINUM, BRONZE, MAGNESIUM



**McQUAY-NORRIS MFG. CO. (AIRCRAFT DIVISION), ST. LOUIS, U.S.A.**  
CANADIAN PLANT, TORONTO, ONTARIO

## PERSONNEL



**Col. W. Fike Marshall**, former operations manager for Northwest Airlines, who directed Marine aviation supply units at Guadalcanal and later transferred to the South Pacific Combat Air Transport, has returned to the company as executive assistant to the president. His headquarters will be in the executive office in St. Paul. Marshall first joined Northwest in 1939 as superintendent of the Eastern division and later became system operations manager.

**Duane W. Choate** has been named in District manager of Atlanta, Georgia, for Minneapolis - Rochester - Burlington Co. and its previous industrial instrument division, the Brown Instrument Co. Choate has been in charge of the Milwaukee branch of the company. W. & Roberts will replace Choate at Milwaukee. He has been stationed in St. Louis.

**Brig. Gen. Arthur W. Yarnum**, former secretary of the Air Staff, headquarters, Army Air Forces, and later commanding general of the Oklahoma City Air Service Command, has been awarded the Legion of Merit. General Yarnum was reported missing and later reported a prisoner of war in Germany. He was well known to the aircraft industry while he was commanding general, material center, Wright Field, Ohio, in 1942.

**Edolph Ott** has been promoted to assistant sales manager, Pacific division, Bendix Aviation Corp., North Hollywood. He formerly was assistant sales engineer of the Pacific Division sales department.

**W. Ward Jackson**, who has served at the War Production Board as aviation consultant to the electrical branch and on the Aircraft Production Division prior to that, has been named director of the product application department of Coleman Col.



hobart Corp., plastics division of the Coleman Corp. of America. Jackson, who was on leave from the Coleman Corp. to WPA, will have headquarters in New York.

**Brig. Gen. Benjamin W. Chadlow**, jet propulsion pioneer, has assumed command of the Twelfth Air Force. Former Command, United States Army, headquarters, announced General Chadlow has been chief of the Materiel Division on the staff of Gen. M. H. Arnold and recently received the Legion of Merit for his part in the development of jet propelled aircraft. When he first arrived in the Mediterranean Theater, General Chadlow was deputy commander to Brig. Gen. Gordon P. Skayville in the Twelfth Tactical Air Command.

**Al Wolfe** has been named employment manager for Russell Army, Dallas.



Wolfe has been with Russell for five years and recently was district traffic manager in Oklahoma City. Wolfe in Oklahoma City he was a member of the aviation committee of the Oklahoma City Chamber of Commerce. Earl Senterly has been appointed district traffic manager for Russell in Phoenix. He has been agent in charge of Love Field, Dallas.

**Capt. Oliver J. Staudeman** has been named operations manager of the Pacific-Alaska division of Pan American Airways. He has been with Pan American for more than eleven years, and prior to that served with the Army Air Corps. He became chief agent in the western division and in 1942 made the first plane survey for Pan American from Seattle to Alaska. He replaced Capt. J. H. Tilson, who has reported, New York for a new assignment.

**Philip D. Buhfist** has resigned as chief product engineer at Eastern Aircraft division of General Motors, and has been replaced by **Walter E. Widen**, who has been assistant chief product engineer. Buhfist joined Eastern in 1942 when the plant went into production of the Avenger fighters. Before that he had formerly been chief engineer of the Chevrolet Commercial Body division in Indianapolis. Widen came to Eastern in 1942 from Oldsmobile in Lansing.

**D. H. Robinson** has been named assistant manager of United Aircraft Corp. New York office to succeed Carl Murray. He will have offices at the Air Laws Terminal Building

and La Guardia Field. He has been located at Denver. Murray has been assigned to the airline's Los Angeles Traffic office as surveillance representative.

**B. Curtis Hendick**, formerly field representative of Republic Aviation Corp., Farmingdale, L. I., assigned to sub-contractors associated with the manufacture of the Thunderbolt P-47 fighter, has been named general manager of D. A. Corbitt and Co., South Norwalk, Conn., manufacturer of E-20 engine covers, components for electronically heated flying boots and other products for the services. Before joining Republic he was with Western Electric Co.

**Brice Bernard**, who has been placed in charge of All American Aviation, Inc., has resigned to open an office in Philadelphia where he will appear as handling of patent cases before the Patent Office and the courts. Bernard prepared the prosecution and preparation of patent applications for All American for the past two years. He will continue to act in connection with a consulting capacity and to conduct the company's patent prosecution with the assistance of Glen Mead who is now patent liaison engineer.

**D. C. Vade**, former executive of the Seattle Chamber of Commerce, has been appointed assistant to the western office of the Seattle Chamber of Commerce. He has been with Pan American Northwest Airlines. Vade was manager of the industrial department of the Chamber and also served as manager of the aviation department. He was instrumental in organization of the Northwest Aviation Planning Council in that territory several years ago.

**Col. Leslie B. Cooper**, 33, helicopter expert and son of Rear Admiral Philip B. Cooper, was killed in a plane crash Oct. 18 in taking off from the 3rd Ferrying Group base at New Castle, Del. Rear James A. Wideman, 30, former assistant editor of the Columbus (Ohio) Citizen, was killed in the same crash. Colonel Cooper had recently been assigned to the engineering division of the Air Technical Service Command at Brooks Field, Mobile, when the crash occurred. He had close contact with the aviation laboratory where he had been engaged since 1942 in helicopter de-



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• These parts for Diesel and aircraft engines will give you a good idea of our ability to supply precision parts and workmanship for your post-war requirements. We'll be glad to plan with you now.

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CLEVELAND 16, OHIO  
Manufacturers of: HYDRAULIC AND ELECTRIC WINDMILL WIPERS FOR AIRCRAFT  
HYDRAULIC DEVICES FOR OILS, FUELS, SOLIDS, GASES, VAPORS, LIQUIDS, AND GASES  
AND COMPRESSIONS - PRECISION PUMPS AND ACCESSORIES

replaced between 1931 and 1942. Colonel Cooper was credited with 2,900 hours of flying as an airline pilot.



**Melvin M. Mason**, chief administrator at the Nashville Division of Consolidated Vultee Aircraft Corp., has been named chief of contract for the division. Mason joined Vultee Aircraft, Inc., in 1939. He served as technical coordinator of the Western Division at Dayton, Mich., before coming to Nashville.

**Fred Larson**, formerly personnel manager of Eastern-Republic Aircraft Corp., St. Louis, has been named assistant general manager, replacing **Ralph Lawson**, who has been appointed central administrator.

**William T. Grant**, president of Dunsmuir Aircraft Co., of Kansas City, has been elected director of Aircraft Accessories Corp. Grant is also president of Mechanical Security Life Insurance Co. and a director of Kansas City Five and Marine Insurance Co., Kansas City Power and Light Co., and Metropolitan Savings and Loan Association.

United States Plywood Corp. announced the following appointments in line with the post-war sales expansion program: **Fred R. Similes** will be manager of the new Columbia sales division in Los Angeles; **Don L. Bradley** has been appointed manager of the San Francisco distribution unit; **Don L. Kinsinger** in charge of the distributing unit at Oakland; and **John R. Peterson** becomes resident manager in Fresno.

**William J. Meyer**, formerly a newspaper correspondent in Pittsburgh, Akron and Cleveland, Ohio, has been named publicity representative in Washington for United Air Lines. Meyer will be located at the Shoreham building.

**Emesto Franco** has joined TACA Airways Agency as legal adviser for the twelve TACA agency companies scattered throughout Central and South America. Prior to joining



**AWARDED DUTCH MEDAL:** Three Contramary Evers have been awarded the Netherlands Flying Cross by Queen Wilhelmina of Holland for their part in flying the Dutch East Indies Air Force's commanding officer from Port Moresby to Samarai, Java, immediately following the initial Jap attack on Hawaii and the Philippines. Left to right: Netherlands Consul General G. W. Swanson made the award to Frank Batta, Hubert Henderson and Rudolph Swoboda.

TACA, Franco was with Pan American-Greece Airways, Inc., as legal and administrative assistant to vice-president **Georges Vidal**. The New York offices of TACA Airways Agency are located at 630 Fifth Avenue.

**Capt. Gordon C. Shock** has been retired from the Army and has resumed his position as district traffic manager for Braniff Airways in San Antonio. Before entering the Army in 1941, Shock was with Braniff for seven years. While in the Army he served tours of duty at National Airport, Los Angeles Field and was air base commander of one of the islands in the Southwest Pacific.

**R. B. Swanson** has been named chief of contract at the Miami Division of Consolidated Vultee Aircraft Corp. Swanson was supervisor of contract administration before his new post.

**Clinton T. Donnelly**, formerly chief of the engine and propeller unit, Army Air Forces, Eastern Procurement District, is now associated as contract manager with the Dunswoy Tool Co., New York, N. Y., manufacturer of Ansonville controller pilot propellers for lightplanes. Mr. Donnelly will act as known representative for the company to all Army and Navy work and will supervise the technical data advertisement departments. At the present time Dunswoy is in production of the Ansonville Model 75 and Model 85 controller pilot propellers for the AAF L-4 and L-5J.

## TELLING THE WORLD

Four aviation advertising campaigns, three by overall generalization and one by an airline, have been included in the 77 campaigns chosen for coverage in *The Blue Book*, advertising annual.

West Coast Aircraft War Production Council campaign was repeated to have reduced substantially a labor shortage of 18,000 workers a month and to have helped recruit 12,000 new workers. Aircraft was handled by Fostis, Cone and Belding.

Manufacture problems dominated the advertising of Eastern Aircraft Division, General Motors Corp., and Lockheed Aircraft Corp. Campbell-Ewald Co. was agency for Eastern. Both aircraft companies increased their recruitment.

Western Air Lines' campaign set out to build post-war prestige and airline traffic by detailing possibilities after the war.

According to word from London, American advertisers are calling their advertisements to Britain where they often appear within a few days. Recently Chandler Brown Corp., South Manchester, Conn., called the advertisement it has run in Canadian and Latin-American publications for mention in *Aviation* and *Pilot*. Consolidated Vultee Aircraft Corp. is another firm that has advertised in Britain.

Association of Export Advertising Agencies has issued a pamphlet "90 Flying Hours from Your Office," which emphasizes how position of export sales may be helped by evaluated export advertising. Copies may be obtained from Henry R. White, 69 East 42nd St., New York City.

Remell-Rompet Co., advertising agency with headquarters in New York, has been appointed to handle the account of Northwest Airlines, starting Dec. 1. George S. Fowler has been named account executive. Representatives will visit all offices along the Northwest system before launching plans for an advertising campaign, they announced.

Vera M. Russell has joined the staff of the Edward L. Bernays organization. For the last two years he has been assistant manager of public relations for Curtiss-Wright Corp., propeller division, and previously was on the editorial staff of the Indianapolis Times.

Delta Air Lines has issued an informative booklet on the line's activities for distribution to passengers. The brochure is in color and is distributed as a souvenir.

Keith Clayton, formerly on the staff of Tide Magazine, and Eugene H. Breckner, formerly with the Chicago Herald-Examiner, have joined the Henry Publishing Co., as members of the staff of Airways, a new publication for airline passengers.



## Geared also FOR THE JOB TO COME

Honeywell engineering has proved itself through wartime aviation developments that border on the miraculous... But the multitude of new problems that peace brings cannot be met only by past accomplishments. At the vast Honeywell test barge and astronomical laboratory, peacetime-minded men are prepared for the job to come — prepared through invaluable experience gained in developing the Electronic Autopilot, the Electronic Turbo Supercharger Control System and other important achievements. This same creative engineering will produce equally valuable contributions to aviation's peacetime needs... Minneapolis-Honeywell Regulator Company, 1947 Fourth Ave. S., Minneapolis 5, Minnesota.

**MINNEAPOLIS**  
**Honeywell**  
CONTROL SYSTEMS

Autopilot of the Curtiss W-4 Bomber Autopilot used on RAF's England Bomber



**For The Greatest Wings In The World...**  
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Developed to meet the needs of military aircraft, D-X Aviation OIL is the result of more than 25 years of experience in manufacturing top quality lubricants. This superior lubricating oil is now available, subject to military priorities. Inquiries are invited.

**MID-CONTINENT PETROLEUM CORPORATION**  
 TULSA, OKLAHOMA

## PRODUCTION

### Details of Fairchild *Packet*, New AAF Cargo Plane, Disclosed

C-82 estimated by company engineers to have capacity for 76 day passengers or 30 sleepers; production to be stepped up after V-E day.

Military restrictions surrounding the development and production of the AAF's latest cargo airplane, Fairchild's C-82 *Packet*, have been lifted enough to disclose additional details of this long-range craft which is being produced at Fairchild's plants at Hagerstown, Md.

The recent first flight of the C-82 marked Fairchild's re-entry into the large plane field and the C-82 generally is regarded as signifying prominently in Fairchild's bid for post-war commercial contracts. (AVIATION NEWS, Sept. 12). Coinciding with the completion of the plane's second series of flight tests came word from Washington that production of the C-82 would be stepped up immediately following the end of hostilities in the European theater.

**Sheet Takeoff**—In addition to details previously reported by AVIATION NEWS, it may now be disclosed that the C-82 is powered by two Pratt & Whitney 18 cylinder R-2840-22 engines, with a take-off horsepower of 2,100 each. Takeoff distance as described by Air Technical Service Command engineers as very short for this type of airplane, it being in the 56,000-pound class.

Engines are mounted at forward ends of the booms. Wings are of gull design. Landing gear is of the biplane type. Wing span is 106 feet.

Though an immediate application is for tactical purposes, Fairchild engineers are in this new craft many varied post-war uses both in domestic and foreign air express and passenger operations. They estimate that the *Packet* can carry as many as 76 passengers by day and 30 by night in upper and lower berths on both sides of the aisle.

**Luxury Airliner**—As a luxury passenger airliner, the *Packet* is expected to have provisions for 56 passengers in spacious reclining

chairs, a lounge, washroom and observation space. Conversion from passenger transport to aerial freighter may be accomplished in less than an hour by removing and storing passenger seats.

Accurate position mile operations costs are not yet available.

**Structure**—Fuselage of the C-82 is literally suspended beneath the outboard wing. Center wing section includes the engine nacelles, which form the forward portion of the twin tail booms. It passes through the extreme top portion of the fuselage at the point of maximum depth a few feet behind the flight deck.

From each side of the fuselage, the center section slopes downward to the points where the outer panels are attached to it. Both the inner section and the outer panels are of two-piece construction using ribs of alclad sheet. The outer panels are reinforced both top and bottom by a corrugation skin beneath the alclad covering skin, while the corrugation under the center section skin is used only on the lower side.

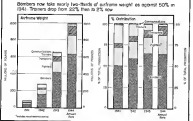
**Twin Tail Booms**—Two aluminum struts, fabric covered, are used on each outer panel. The twin tail booms supporting the empennage are of metal monocoque construction. The horizontal stabilizer is of conventional alclad frame and covering, as are the vertical fins. Rudders and elevators are alclad frames with fabric covering. Two tabs are used in the elevator and one in each rudder. Two slotted wing flaps are used on both sides of the wing from the ailerons inboard to the fuselage, one inboard and one outboard of the engine nacelles.

Fuselage is of monocoque construction with alclad sheet and formed longitudinal stringers mounted on fabricated alclad frames. Seven longitudinal booms take the floor and tie-down loads in the main cargo area beneath the plywood-covered floor.

**Tricycle Landing Gear**—Landing gear, as previously reported is of the biplane type with single wheels at all three points. The main wheels retract into the underside of the engine nacelles, and the nose wheel is concealed within the nose section forward of the cargo space. Total travel of the main wheels is 9 1/2 feet. Electric instead of hydraulic mechanisms are used for operation of all power-actuated devices except brakes through the slipclutch with emergency hand operation mechanisms also provided.

This is the first wingplane designed from the drawing board up solely for hauling military cargo. The original design was begun in 1941 by Edmund Thielen, Fairchild's chief engineer, in answer to the need of the AAF for a fast,

#### SHIFTING PROPORTIONS IN PLANE PRODUCTION





## Experience and know-how

### ...for tough manufacturing jobs

Solar pioneered the present day airplane exhaust manifold industry... built the first one of stainless steel on a home made drop hammer... fought for its life in the coming years... and grew to maturity and leadership during the decade of general business depression before the war.

Leadership in building airplane exhaust systems and other products which must withstand hot gases, acids, heat and corrosion is the course set by Solar for today and for the years to come. Much has been learned about the design and engineering of such products... about the product characteristics of stainless steel and similar alloys which make them difficult to process and fabricate.

Airplane and engine manufacturers are invited to bring

to Solar any problems involving the engineering and production of new power products of this nature. These are the kind of manufacturing jobs Solar will continue to seek... because they are the tough jobs Solar knows best how to do. Address "Management".



SOLAR AIRCRAFT COMPANY SAN DIEGO 12, CALIF. DES MOINES 5, IA

long-range military cargo plane which could also be adapted to other tactical purposes. A mock-up was completed early in 1942 and before the end of that year the AAF mock-up board, with some modifications, approved the design. Detailed engineering work was begun by the combined engineering staffs of Fairchild and the Air Technical Service Command, Wright Field. Actual engineering and design, including the construction and preliminary flight testing of the prototype took less than 2 1/2 months. —C. S. H.

### AAF to Procure Own Radio Equipment

Job of development, research and maintenance of communication devices, previously function of Signal Corps, is transferred to Air Force.

Army Air Forces has taken over procurement of all communications equipment peculiar to the AAF. This function heretofore has been lodged in the Signal Corps, although AAF activities have been assigned to work on development of aircraft equipment.

Transfer to AAF marks the end of several months of discussion between AAF and Army Service Forces under which Signal Corps procurement furnished ASE has been contending that most of the units use common items and that duplication in procurement will follow separation of ground and air buying.

**AAF Gets Responsibility**—Under the War Department directive, responsibility for research, development, procurement, storage, issue and maintenance of air communication equipment has been shifted to the AAF. Over-all control of the new program will be in the hands of Brig. Gen. H. M. McClelland, air communications officer.

The air communications officer is directed to implement any directives of the special consultant to General Arnold, Dr. E. L. Bowen, who is on leave as dean of the electrical engineering department of Massachusetts Institute of Technology, and who also is listed as an expert consultant to the Secretary of War.

According to the regulation setting up organization of the new program, the special consultant "aids and advises the Commanding General on special communications plans and programs and



### PORTABLE AIRCRAFT SERVICE STATION:

Aircraft engine test unit used in the field by the Army Air Force provides for checking of every important phase of engine operation. These portable test units, designed and built by Jacobs & Co., operations in aircraft engine test equipment, are so planned that two radial air-cooled or two liquid-cooled engines may be tested simultaneously.

is empowered to act for the commanding general, AAF, through the medium of the chief of air staff, in the determination of policies, the initiation of special projects and in all matters in any way concerned with communications, including planning, training, organization, personnel, intelligence, procurement, requirements and operations."

### Honored for JP Work

Col. Donald J. Kern, of Wright Field, has been named winner of the Chairman H. H. Hens Award for the most important achievement by an officer or division of the Air Technical Service Command for his part in development and production in quantity of the turbo-jet engine now powering American and British planes.

The award, given annually by the Institute of Aeronautical Sciences, will be made to Colonel Kern at Dayton on Nov. 9 by Lt. Gen. William S. Knudsen, head of the Air Technical Service Command.

**Sent to England**—In connection with the award, it was disclosed that Col. Kern was sent to England to observe the secret development of the jet engine demand by Air Commodore Frank Whittle as long ago as 1941. By 1942 he returned with designs and British experts aid, with the cooperation of General Electric, the engine was developed for an airplane which was designed and built by Bell Aircraft Corp.

### Helldiver Output

Full production of Curtiss B2AC Helldiver dive bombers will continue for at least another 12 months and cessation of hostilities in Europe will not affect production schedules, according to Rear Admiral S. C. Kenney, chief of the Bureau of Aeronautics.

At the same time it was announced that production schedules for the Helldiver at the Columbus plant of Curtiss-Wright have been held or suspended during the past year and in addition to completed planes the equivalent of 150 additional planes had been produced by the plant in spare parts and assemblies.

### Supersonic Wind Tunnels

Manufacturers, confronted with prospect of preparing for bombing problems to be encountered by aircraft flying at the speed of sound, or faster, are discovering that ballistics research laboratories can offer valuable data.

More wind tunnels making possible tests of high-speed, several times that of sound, and with larger thrusts than any yet built, are being constructed.

Ballistic experts are making available spark and high speed x-ray pictures which show what happens with respect to shock waves and compressibility at super-speeds.

## Two Plants Pass 50,000 Engine Mark

Chevrolet Division of GM and Packard plants pass production mark on Pratt & Whitney and Rolls-Royce Merlin power plants.

More than 50,000 Pratt & Whitney aircraft engines were (left) out by the Chevrolet Motor Division of General Motors in the 30 months to Sept. 30 in eight New York and Midwest plants. Production peak came in November, 1943, when 1,242 were produced.

Packard Motor Car Co. also announced it had topped the 50,000 mark in production of war engines. It has been producing the Rolls-Royce Merlin engine, used in five Allied planes including the North American P-51 Mustang and the Mosquito fighter-bomber, and Packard marine engines used in PT boats.

**Chevrolet Makes Three Models—** Chevrolet has been building three models of P&W engines. Two models of 14-cylinder, 1,200 hp are used on Liberator bombers and Douglas C-47s. The third is the R-2600-C, turning up speed over 2,000 hp and used in the



**Packard's 50,000th** Packard President George T. Christopherson turned his company's 50,000th war engine over to H. F. Schenck, North American Aviation's Texas Division manager for installation in a Mustang fighter. The engine is a 2,600 hp V-12 liquid-cooled Rolls-Royce Merlin with supercharger for high altitude work.

Northrop P-61 Black Widow and the Thunderbolt.

The engines are mass produced in plants in Buffalo, Indianapolis, Muncie and Anderson, Ind.; Detroit, Bay City, Saginaw and Flint.

## Duramold Move

Headquarters for Duramold Division of Fairchild Engine and Airplane Corp. are being moved from New York City to Fairchild's Huntington, N. C., plant where AT-31 trainers were made until the recent cutback in trainer production. The shift involves executives of the division and other local work, about 32 to 33 in all. Direct and indirect employees of the division in New York totaled about 120, including technicians and research personnel.

**Expansion.**—Recent contracts awarded Duramold call for an expansion of facilities not possible in the New York quarters, but which can be handled at the Huntington plant, a DPC facility. Duramold process of molding plastics and plywood for aircraft is a Fairchild development.

## Shift to Farm Tools

Dave-Weinhold Manufacturing Co., Inc., of Wichita, which has been producing aircraft parts, will go into the farm implement field as soon as work on present contracts is completed.

Company already is making some hydraulic lifts and feed grinders, both on the preferred

list of essential items of the War Production Board. The hydraulic crane-loaders are being distributed by Ford dealers.

## Navy Asks Speed-up

Navy is driving for intensified production of planes and equipment, with virtually every company producing aircraft or components either receiving telegrams or visits from top Navy armament men to see that the products are contemplated for that product and that they are vitally needed in the Pacific theater.

Curtiss-Wright employees have been notified production of SBC2C Helldivers will continue at least another year, and Eastern Aircraft Division of General Motors employees have been asked to step up production of Avenger torpedo planes by 46 a month above present high-level output.

## Boeing Cutback

Boeing plants of Boeing Aircraft Ltd., at Nelson, Chilliwack and Victoria, B. C., have been closed because of cancellation of part of Boeing of Canada's contract for Consolidated PBV Curtiss flying boats, John McGraw, assistant general manager, disclosed.

Boeing of Canada now is making plans for the Boeing B-29 Superfortress in addition to completing the balance of the PBV contract remaining after the cutback at its Vancouver plant.

## A "Shoe Box" Auto Engine?

Not only will the jet engine and general gas turbine power plant probably replace some-day the reciprocating engine used in aircraft, but they will be built at half the cost and will offer drastic weight reduction, according to a sheet engineer at a major aircraft company.

As an example of the possibilities of these new power plant developments, the engine, whose name cannot be used because Army and Navy officials do not wish it known that the company is working on jet propulsion, expressed the opinion that an automobile gas turbine engine giving a power output equal to that of a present day auto motor, will need be no larger than a shoe box.



This is a new actual model plane shown—it is open to illustrate the screen on which a Black Widow can strike in the dark. Simple design resulting from its unique look in the Northrop Black Widow.

It is designed to carry 2 or 3 specialists . . . to fly fast and range far . . . to locate and destroy the enemy in darkness or daylight

## NORTHROP BLACK WIDOW P-61 NIGHT FIGHTER



NORTHROP AIRCRAFT INC.  
NORTHROP PLANE FACTORY  
NORTHROP PLANE FACTORY  
NORTHROP, INC.

The Black Widow may fairly be called a revolutionary new airplane.

It is big as a medium bomber . . . with as a fast pursuit . . . built to blast out of the sky anything that can fly.

Yet with all its bulk and speed, the Black Widow is nimble as a cat . . . it is one of the most maneuverable of all U.S. planes in use today. This superior handling ability comes in large part from the "retractable allison" designed into each wing. Retractable allison enables the Black Widow to make tighter

turns at high speed without spin or stall.

As our Army's first airplane designed especially as a night fighter, the Northrop Black Widow is equipped to stalk down right-below enemy planes. And it packs enough 20 millimeter cannons and 50 caliber guns to rip apart anything it bores.

The Black Widow is the most recent evidence of Northrop's talent in aerodynamic development and production. This ability will continue to help the country through out the war—and in the peace to come.

## Detailed War Photos at dead of night

### taken with Fairchild AERIAL CAMERAS



Wie photography can't wait for the rising sun because enemy troops and convoys move at dark. So photos must be taken at night! Also, our photo-planes are far safer from "ack ack" when their backgrounds is a curtain of black.

Both our Army and Navy photographers at dead of night, from altitudes as high as 10,000 feet. Huge flash bombs are employed, and the camera used is the specially designed Fairchild Sperrycooled Night Camera, popularly known as the "Owl". The pictures taken with these high precision cameras reveal all the essential detail shown as clearly as though taken by day.

Night aerial photography... perfected as no present flash came by U. S. Army engineers with Fairchild equipment cooperating in camera design... it is another reason why our forces are moving forward, steadily, speedily, to victory.



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THE STORY OF AERIAL PHOTOGRAPHY IS THE STORY OF FAIRCHILD CAMERAS



Stockholders study photograph of Japanese invasion on the Pacific coast.  
—O. J. Shaw photo



Looking from left: Harry and a Fairchild Aerial Night Camera. One of the many photo-planes shown in use on a night photo mission over the Pacific coast.

## FINANCIAL

### AA Revamps Capital Structure To Meet Post-War Expansion Needs

Stockholders to vote Dec. 6 on plan to increase authorized common from 1,000,000 shares to 2,400,000; company expected to utilize 50,000 preferred Jan. 15, 1945.

American Airlines, in a far-reaching revamping of its capital structure, is preparing to anticipate its future financial requirements. As indicated in *AVIATION NEWS*, Sept. 18, 1944, American, committed to purchase new Douglas equipment costing approximately \$50 million, is clearly without the immediate capital resources to finance such fleet acquisition. Now a financing plan has been unveiled which should permit the line to obtain adequate capital for its forthcoming needs.

Stockholders will be asked to approve, on Dec. 6, a measure which will increase the authorized common stock issue from 1,000,000 shares of \$10 par value to 2,400,000 shares of \$5 par value. This will then permit a two-for-one split in common. Accordingly, the 374,848 common now outstanding will be exchanged for 1,118,896 new common.

**Market Interest.**—This stock split

may add to the market interest of the security. Many investors are more inclined to purchase low-priced shares and there is less reluctance to buying a stock selling at \$40 a share than one at \$10, even though a lesser number of shares is involved.

American has further indicated that the present 50,000 shares of \$4.25 cumulative preferred will be retired Jan. 15, 1945, at \$100 a share plus accrued dividends. Actually, little of the debt will occur. As this preferred is convertible into the common at \$70 per share or for 1 1/3 shares of common, it will be more profitable for the preferred shareholder to convert into the common. With the common currently selling around \$60 a share, the equivalent value of around \$110 per preferred share would obtain in conversion to the \$100 debited by the call price. In effect, the company is "forcing" conversion of the preferred.

**1,118,896** Reserved—Thus, pre-

son is made in reserving 162,833 common for conversion of this preferred. While some dilution of the common will occur, it will be justified in relieving the senior equity base at this time. On completion of this operation, American will have 1,232,554 new common outstanding, consisting of course that all the preferred will be converted. This should give the owner one of the largest common share capitalizations in the industry, second only to United's 1,500,000 common shares.

There are a number of reasons why American must get its present preferred out of the way. Among other things, it facilitates issuance of another series of preferred which would have been difficult otherwise. Further, it is possible that a new preferred series can be struck up with lower dividend rate. Moreover, the "call" of the old preferred will not require any cash to be paid by the company—provided present market levels hold.

**Business.**—The new preferred stock issue of 200,000 shares of \$100 par value, none of which is to be presently issued, is to be authorized. In addition, 100,000 shares of employee stock is also to be created.

Preferred stock financing among the airlines has provided a very desirable and economical medium through which to raise new capital. While not as yet indicated, it is likely that the new American preferred will also be convertible into common. This provides considerable attraction as not only is the opportunity for participation in the common afforded but a stable dividend return is reasonably assured. Moreover, while the company may use a senior equity at relatively low cost, the security is ultimately designed to be reduced or converted into common stock. The fate of the present American preferred is testimony enough. Sincerely, PCA called its convert-

ible preferred for retirement in May, 1944 and in this process forced conversion for most of the issue into common.

**UAL Financing.**—United Air Lines successfully sold 100,000 shares of \$300 par 4 1/2 percent preferred issue last January. This stock is convertible into common at the rate of 3 1/3 common for each share of preferred. Hence, while the new preferred was marketed around par, it is now selling close to \$130 per share. Why? Simply because the appreciation in the market price of the common has translated tangible value to the conversion privilege held by the preferred.

The American proposed employee stock is in many respects similar to the management stock authorized for United Air Lines. American would issue to its employees and officers capital stock under terms to be authorized by the board of directors. This issue would be convertible into common three years after date of issuance. Closed management shareholders would have to wait about five years before conversion into common could be made. It is presumed that these new shares would be offered to key personnel at favorable levels. This is nothing more than a bonus and must be so regarded. The device of this employee stock, however, affords an added incentive as pride of ownership in the corporation is fostered.

**May Issue 200,000.**—Should American decide to issue all of the proposed 200,000 new preferred at one time, at least about \$20,000,000 would be obtained. This also would represent the largest piece of capital stock financing attempted by any air carrier and would double the present peak of financing established by United early this year.

It is too soon to anticipate the actual date of the new American financing. Much is dependent on the date of delivery of the new equipment. Moreover, the state of the capital markets will remain as an important underlying factor in determining the marketing time for new securities.

**Harlow Aircraft Co.** reports net income of \$37,835 for the quarter to Aug. 31, or 8 cents each on 454,438 shares, compared with \$4,907 or one cent a share in the preceding quarter and \$11,321 or two cents each on 241,426 shares in the quarter ended Feb. 28, 1944.

## North Atlantic Hearings Contrast World, Domestic Route Sessions

Statistical studies criticized as based on steamship experience and declared not applicable to air transport; arguments expected to terminate this week.

By DANIEL S. WENTZ II

Contrast between an international route proceeding and the familiar pattern of a domestic case was plain as the North Atlantic hearing moved into its second week.

An outstanding difference lies in statistical studies of carrier traffic. In domestic cases, but largely lacking in the North Atlantic proceeding, both familiar exhibits in hotel regulations, post office records and airline carrier data are not available for most European countries, although the record for trans-Atlantic travel is more nearly complete.

**Exhibit Criticized.**—The comprehensive study prepared for the Civil Aeronautics Board by F. H. Crozier is part of the record, but several airline attorneys have asserted that it is based largely on steamship experience. "That, they say, is hardly a reliable index of the potentialities of trans-Atlantic air travel. An exhibit prepared by L. F. Borspelt, United Air Lines attorney, was introduced for the same reason.

Another significant feature, absent from domestic cases but of extreme importance in the present proceeding, is the role of national interest and prestige. The Board's map, also part of the record, shows tentative routes the Government feels are required for adequate protection of the national interest abroad, and sets the pattern for negotiations.

Most of the eleven applicants have presented their cases, and the hearing likely will end this week. TWA witnesses, led by the line's president, Jack Frye, asserted that with five Boeing Strato-liners recently received by the Army, the line could, if certificated, begin North Atlantic operations by next June 1. The carrier has many million miles of overseas and foreign

operating experience as a contract operator with the ATC. Asks Line to Certify—TWA proposes service between the U. S. and Calcutta, joining there with a trans-Pacific link to form an around-the-world route. Frye asked the Board to grant this route to TWA as a competitive yardstick for Pan American, which he feels will be certificated around the world. Frye sees competition among U. S. flag carriers as desirable but not necessary on parallel routes. He suggested that the Board's first proposed trans-Atlantic routes be certificated to separate carriers.

**Deferred Freight System.**—C. L. Galle, TWA executive assistant, outlines a deferred freight system similar to that practiced by TACA, a Central American line in which TWA holds a stock interest, by which cargo is delivered to London on a five-day guarantee. With Constellation equipment, deferred freight would move at rates no less than 25 cents per ton mile.

PCA's case was outlined by its president, C. Rodell Moore, whose company proposes trans-Atlantic operations with DC-4 equipment, offering passengers from 4 to 5 cents per mile, with an additional 1 cent per mile charge for berths. These low rates would be offered on all three routes PCA has applied for—from the U. S. to Moscow, Calcutta and Canton.

**Northeast Case.**—Northeast Airlines' case for Boston-London and Boston-Moscow routes was presented by S. J. Solomon and Paul F. Collins, president of the line. The carrier has many miles of the proposed international opera-

tion would be underwritten by the Atlas Corp., one of Northeast's largest stockholders. Atlas is owned by Philip Ochs, New York industrialist.

Rites. American Report had completed its presentation. In the application which resulted in the original certification of Report's routes, the line had asked for terminals within Europe. The Board did not consider the request at that time because of the Neutrality Act then in force. Consequently, Report's position on the present proceeding is considerably strengthened by the fact that it is now pressing the remainder of an earlier application. It also is asking that its temporary certificate be made permanent and that additional routes be certificated.

**Other Writings.**—Trans-Oceanic Air Lines, and U. S. Midnight Star Air Line were to follow TWA, with Pan American Airways due to present its first witness late last week. The Board has extended its existing certificate to join at Calcutta with a trans-Pacific route extension to form an around-the-world service, and numerous routes between European countries.

The company's plans contemplate use of the "Type 10," aircraft on the largest flight, a plane which Pan American Airways will make complete a New York-London fare as low as \$180. For cargo, the company plans a commodity classification service with rates near 25 cents per ton mile.

### ATC, NATS Public Operations Formulated

President Roosevelt last week ordered the Secretaries of War and Navy to prepare ATC and NATS plans to carry commercial passengers and cargo whatever approved by the War Relocation Authority.

The order formulates a situation which has obtained in a small way since the beginning of the military air service, but it is expected to result in expanded military air service for relief and rehabilitation work and restoration of world trade.

The plan was worked out by the CAB and presented to the War Relocation Authority as an interim measure until commercial airlines are re-certified for international service. The plan calls for all the agencies concerned said there was no objection to convert ATC or NATS into permanent commercial carriers.

## Warner Stresses New Business As Factor in Post-War Air Traffic

CAB vice-chairman forecasts wide gains in international as well as domestic travel as result of greatly expanded needs for service in first five peace years.

Importance of consideration of newly-created air passenger business as a factor in post-war air traffic is stressed by Edward T. Warner, vice-chairman of Civil Aeronautics Board, in his latest forecast on international air travel, air mail and air cargo.

Warner's view, outlined at the American Merchant Marine conference in New York, is that in five years the ratio of newly-created business in transoceanic air travel will be at least a 50 per cent, trans-Atlantic as much as 90 per cent, to Beurl and the Argentine 60 percent or more, and trans-Pacific as high as 75 percent.

Air Preference—Ratio of gains in the north far-reaching influence on travel distribution, he says, estimating that with post-war air service standards and rates equal to those for ship travel more than half of pre-war Atlantic traffic will go to the air preference, with even a higher diversion for longer trips. This also assumes general economy and trade relationships like those of the post.

**Other Considerations.**—Political and economic developments in Latin America and the Far East may increase business and passenger air travel to the south and west to half of its pre-war level, otherwise might be anticipated.

There is hope that domestic rates can be reduced by about a third through equipment and operating economy during a five-year period after the war. Cabin air-diploma surpluses accommodations seldom sell at less than 4 cents a mile, often 4 cents or higher, air rates are about 3 cents a mile domestically and 7.5 cents in Latin America.

"If domestic passenger rates are actually reduced to 3 cents per mile, about as low as he does hope for in the next period of development, I should still expect trans-Atlantic rates in aircraft with supercharged cabins to stand at 5 cents a mile" with an intermediate stop, and 7 or 8 cents if non-stop between a major European capital and U. S. port. Present trans-Atlantic air fare, with stop in Newfoundland, is about 17 cents per mile.

**Rates on the Pacific** may be about the same or a little under that on the Atlantic, with South and Central America rates appreciably lower. Domestically, if rail rates remain at 1940 level, domestic air passenger traffic will go up 5 or 6 times. If airline fares from New York-London equal those between New York and Los Angeles, travel between the U. S. and western Europe will be nearly as great as between U. S. coasts. The former route will be likely to exceed half of the transoceanic since the fare probably will be 75 to 100 percent higher than that to California. Also, it seems unlikely that travel from the U. S. to below the north coast of South America amount to more than a third of that between the U. S. and Europe during the next few years while that between that country and the Far East may have a maximum probable volume of one-quarter the European potential or less.

**Year-Round Average.**—Warner hopes for a year-round average across the North Atlantic of 450 passengers a day on each carrier, to South America below the north coast, 40 to 40, to the Far East, 40 to 50, Australia, 20 to 30, Hawaii, 10 to 20, and Africa below the north coast, 10 to 20. The cargo picture is different. Speed is not the prime consideration for a large amount of freight, but there is still room for development of cargo business. A lower cargo rate is to be expected, but the characteristics of air transportation probably will keep it primarily a passenger operation. Aviation's air transportation, however, will create some new cargo movement.

**15-Cent Port-to-Port Rate.**—An airport-to-airport rate of 15 cents per ton-mile—and perhaps 15 cents with reasonable frequent refueling stops and moderate fuel economy may be attainable after the war on such services as those to South America. For the trans-Atlantic trans-Pacific services, however, the maximum for a number of post-war years will probably be a third and perhaps a half higher than this. Warner's most optimistic predic-

### Travel Market

There is the summary of the market for international air travel, air mail and air cargo anticipated for the post-war years by Edward T. Warner, vice-chairman of Civil Aeronautics Board.

"Very large increases" in international air traffic, prompted by a business of carrying passengers, although by no means exclusively so.

"If the increased passenger business will be newly created rather than obtained by diversion from surface vessels."

"Air cargo probably will be increased to 10 times pre-war volume or more on routes that already had good air service, and correspondingly high where as such service existed. Above that, air cargo will increase in high speed and selective, representing only a "tiny fraction" of the vast mass of freight the world's oceans of the world carry."

There is a cargo rate of 25 to 25 cents a ton-mile.

He foresees a total volume of air cargo is sent from Latin America in a few years after the war of 50 million ton-miles annually, or 3,000 tons a year in each direction between the U. S. and South America, 4,000 between the U. S. and the Caribbean and the Pacific.

Annual air cargo tonnage in a few years may reach 16,000 tons to Northern Europe, 8,000 to the Mediterranean area, 1,000 to Africa, 1,500 to Australia and 4,000 to the Far East.

He speaks of letters only in considering mail, since parcel post, parcel and printed matter are cargo. If surcharges on international letters may be expected, the characteristics of air transportation probably will keep it primarily a passenger operation. Aviation's air transportation, however, will create some new cargo movement.

**15-Cent Port-to-Port Rate.**—An airport-to-airport rate of 15 cents per ton-mile—and perhaps 15 cents with reasonable frequent refueling stops and moderate fuel economy may be attainable after the war on such services as those to South America. For the trans-Atlantic trans-Pacific services, however, the maximum for a number of post-war years will probably be a third and perhaps a half higher than this. Warner's most optimistic predic-



#### HOW UNITED'S DC-4S WILL LOOK:

This retouched photo of a C-54 shows how United Air Lines expects its 51 four-engine Douglas DC-4s and DC-4's to look when they carry the company's colors as they go into post-war service on United's coast-to-coast and Pacific Coast routes. American

Airlines recently showed the press in New York a C-54 on which it had done its own post-war United earlier was carried down by the Air Transport Command on a similar request and did the photo job instead.

### British Plan Big New World Airport

Field near Blackpool to have one 5,000-yard runway and two of 4,000 yards each with additional facilities for flying boats.

One British idea for a trans-ocean airport is announced in a design for a field to be on the west coast near Blackpool.

As designed by Blackpool Corp. and described by *The Aeroplane*, British air journal, the plan envisions three runways, the main one N. E.-S. W. 5,000 yards, with subordinates N. W.-S. E. and N. N. W.-S. S. E. each 4,000 yards. Parallel taxiways would connect with these at 500-yard intervals. Flying boat facilities would be available.

► **Feeder Service Runways**—Original plans suggest three satellite runways in the triangle formed by the main runways, to be used as a separate subsidiary airport for feeder service used by British and European airlines. While such an arrangement might be desirable from the space standpoint and speed of connection between domestic and overseas planes, approaches to the latter airport would cross the main runways, which might prohibit such a plan. Douglas has been approved by the Blackpool Town Council and from the technical point of view by the Air Ministry.

Cost would run about \$124,000,000. Construction would be in three phases in order to make use of the part as soon as possible.

### Tax Study Group Of CAB to Meet

Advisory committee to the Civil Aeronautics Board in its investigation of multiple state taxation of airlines will hold its first full meeting in Washington, Nov. 26, called by Chairman Oswald Ryan, member of the CAB.

Another step in the study has been appointment of Prof. Eugene Stodd, Powell, of Harvard Law School, a leading authority on con-

stitutional law, to aid the Board and its advisory group.

► **Headed By Mitchell**—The investigation is being directed by George W. Mitchell, tax economist of the Federal Reserve Bank of Chicago, whose special staff has called on the airlines for information on the various issues involved.

There also were staff conferences with state tax officials during a recent S. L. Lums meeting. In addition, Ryan consulted with various tax experts in a number of western states on a recent tour.



► **Trans-Ocean Airport Proposed for England's West Coast** The above sketch shows Blackpool proposed for a trans-ocean airport on the West Coast of North England. Main runway at top would be 5,000 yards long and each of other two 4,000 yards. They would be paralleled by taxiways of frequent intervals. A subsidiary airport for feeder line use would be within the main runway triangle. Drawings appeared in *The Aeroplane*, British magazine.

### PAA's 'Type 10' May Be Constitution

50-ton plane designed for trans-oceanic service is believed to be new giant Lockheed model.

Details of the so-called "Type 10" 50-ton plane Pan American Airways proposes to use in trans-oceanic operations, as given in engineering sketches prepared as part of its presentation in the North Atlantic route case, definitely indicate it may emerge as the new highly secret Lockheed Constellation, although Pan American did not name the manufacturer.

The data shows that the Type 10 will weigh 115,754 pounds empty equipped. It will be designed for 145 passengers, a number which will be increased to 125 day passengers in the North Atlantic service. At night the ship is to be equipped for 88 sleep passengers, 22 berths and 9 staterooms, with six cooks each.

► **Four 3,500 Hp. Engines**—The plane's four engines will develop a takeoff horsepower of 3,500 each, with a rated horsepower of 2,800. Cranking at 25,000 feet, the ship is designed to operate at 288 mph at 84.3 percent horsepower. Design permits access to the engines during flight. The planes will be equipped with pressurized cabins.

Other data disclosed include:

- Gross takeoff weight, 124,000 pounds
- Gross landing weight, 103,000 pounds
- Eleven crew members.
- 3,600 cubic feet cargo space.
- Payload, summer operation without fuel from Sherman, Ark., to Boston, 23,410 pounds.
- Advance estimates place the cost of the plane at \$5,000,000. Pan American phase call for eleven of the ships in the North Atlantic service.

At a press conference Pan American officials declined to identify the manufacturer, saying the information was restricted. They said the contract for Type 10's, although not complete in detail, does not give the company exclusive rights to the plane. Expectation is Pan American will get first delivery, however.

► **15th Anniversary**—This month marked the 15th anniversary of Pan American's international operations. It also saw announcement by Douglas Aircraft that it had built DC-7's, on which Pan American disclosed some time ago it has

made the initial payment, will cost \$40,000,000.

Douglas disclosed that each of the four engines powering the DC-7, of which the basic plane is under construction at Douglas Long Beach plant, will have even greater displacement than the 2,100 hp Pratt & Whitney Double Wasp.

The ships are to have two decks, one for 15 passengers and the other for 15 crew members.

### CAB Hears Argument On K.C.-New Orleans

Expected to result in Shreveport-Kansas City link to close large gap in Mississippi Basin.

Civil Aeronautics Board last week heard oral argument by applicants and intervenors in the Kansas City-Tulsa-New Orleans case (Docket #81, et al.) which probably will result in a link between Shreveport and Kansas City to close a large gap in the air transport pattern of the Mississippi Basin.

Delta Air Corp., Mid-Continent Airlines and National Airlines are applicants for connections between New Orleans and Kansas City via various intermediate points, but Delta appeared before the Board with the backing of Eastern Air Lines, Inc., who recommended in its report that Delta's AM 54 be extended by 450 new route miles to connect Shreveport with Kansas City.

► **National Termed Down**—Applicants by National Airlines in the proceeding sought to secure that carrier's system east and north of New Orleans, but these were turned down by the Kammner Counsel for the airline asked the Board to find that the New Orleans-Kansas City route could support two carriers.

National's application was the basis for a strong protest to the Board by counsel for Eastern Air Lines that National's successful application was restricted. "We're losing" Eastern. He said that, in the New York-New Orleans service, National was making the trip in 36 minutes less time than that requested by Eastern's planes.

Representatives of cities in Kansas and Arkansas urged the Board to approve additional air service in their areas, pointing out that existing carriers in the area were charged with the duty of operating what could not fulfill the need for north-south service.



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